AGANA NAVAL AIR STATION
AGANA, GUAM

Engineering Field Division/Activity:	PACDIV
Major Claimant:	COMNAVFACENGCOM
Size:	2,435 Acres
Funding to Date:	$15,703,000
Estimated Funding to Complete:	$44,590,000
Base Mission:	Provides services and material support for transitioning aircraft and tenants
Contaminants:	Asbestos, paint, solvents, POL sludges, scrap metal, heavy metals

Number of Sites:		**Relative Risk Ranking of Sites:**			
CERCLA:	29	**High:**	1	**Not Evaluated:**	22
RCRA Corrective Action:	0	**Medium:**	5	**Response Complete:**	0
RCRA UST:	0	**Low:**	1	**Total Sites:**	29
Total Sites:	29				

BRAC III

EXECUTIVE SUMMARY

The island of Guam is located approximately 3,500 miles west of Hawaii and 1,200 miles east of the Philippines. It is one of the northern islands in a series of South Pacific Ocean islands created by submarine volcanoes on the north-south oriented Marianas rift. Agana Naval Air Station (NAS) is located just north of the center of the island where it is the narrowest. The Guam International Air Terminal, which handles all commercial flights through Guam, is adjacent to the base and uses the base's runways. Typical operations on the air station that contributed to contamination include machine shops, painting and paint stripping, instrument and gauge maintenance, vehicle maintenance, aircraft maintenance, fire fighting training, facilities maintenance shops for Public Works and the Seabees, photographic labs, power plants and boilers, medical laboratories, landfilling of wastes, Wastewater Treatment Plants (WWTPs) and storage of materials (including hazardous and chemicals), supplies, fuels and ordnance. The past practices and operations which created contaminated sites were modified in recent years to prevent further contamination from occurring and now operations have ceased as a result of base closure. The sites of primary public concern are those that may have a contaminant migration pathway to the groundwater aquifer. This aquifer is of concern to the Navy and the public because the water is of a quality that could potentially be used for drinking water. This base is not under any legal agreements prescribing cleanup schedules.

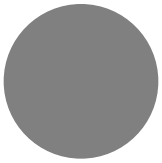
The air station is located on the northern limestone plateau which is highly permeable allowing the high rainfall to quickly migrate to the groundwater aquifer. There is little surface water flow except during the rare periods of torrential rains, which flows to sinkholes in the limestone. This is the primary potential migration pathway for contaminants found on the base. The base is surrounded by commercial and residential development and drinking water wells are within one mile of the base. The question of groundwater contamination and migration must be resolved before any parcels can be transferred. Due to the complex hydrogeology of the area, an aggressive groundwater investigation is in progress to characterize the groundwater regime beneath the base.

A Restoration Advisory Board (RAB) has been established for Agana NAS. A Community Relations Plan (CRP) has been developed and three Information Repositories have been set up.

Currently, the 29 sites on the base are in the initial study phase. Three sites have completed the second step, the Site Inspection (SI) phase, 16 sites have this phase underway and the remaining ten sites plan to start an SI in FY96. In FY95, removal actions took place at 22 sites to install fencing to prevent exposure to contaminants of people working in the areas by inadvertent contact with contaminated soil. Two other removal actions are underway to install a cap on a landfill and to install drainage controls on a holding pond. In FYs 96 and 97, the SI phase will be completed for all the sites and they will start the in-depth study of the Remedial Investigation (RI).

The Agana NAS RAB has been a major success in the cleanup program on this base. The RAB has 16 members of which nine are from the local community. Members of the Reuse Committee also participate as RAB members. The RAB has reviewed all of the planning documents produced in connection with the cleanup and the closure process. The RAB has met on a monthly basis since its formation in December 1993 and the meetings have been very productive. This is the primary source of information for the general public on the environmental cleanup ongoing on the closed base.

The Base Realignment and Closure (BRAC) committee listed Agana NAS for closure in the 1993 BRAC Report. The military operations on the station have ceased. The cleanup of contaminated sites is proceeding. The property has been divided into four areas that are potentially suitable for public use and interim lease. Three Findings Of Suitability for Lease (FOSL) have been completed and the parcels are under interim lease arrangements.



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Current Status Of Sites

Studies Underway	29
Cleanups Underway	0
Response Complete	0
TOTALS	29

AGANA NAS
RELEVANT ISSUES

ENVIRONMENTAL RISK

HYDROGEOLOGY - Guam is one of a series of South Pacific islands created by submarine volcanoes on the north-south oriented Marianas rift. The volcanic rock is overlain with coral reef limestone. There are four distinct physical features on Guam, a limestone plateau in the northern half of the island, an area of karst topography with steep limestone capped volcanic mountains in the southern half of the island, a sediment filled basin in the center of the southern mountainous area and coastal alluvial deposits.

The rainy season in Guam is from July through November with a mean annual rainfall at Agana NAS in central Guam of about 87.4 inches. On the northern limestone plateau most rain infiltrates the permeable formation quickly to reach the large groundwater aquifer and then travels laterally to the nearest coast. In the south, rain is primarily runoff due to the impermeability of the terrain creating many rivers and streams which drain to the nearest surface water body or the coast. Rain that does infiltrate is trapped in small aquifers between the rock formations and discharges as small seeps and springs. In the basin area is the Fena Reservoir, the primary water supply for the island, which is fed by runoff through numerous rivers.

Agana NAS is located on the south end of the northern limestone plateau in the center of the island. The limestone bedrock is overlain with well drained, sandy clayey soils with limestone gravel. Rainfall in Guam averages up to 100 inches a year. Normally, precipitation drains rapidly through the soil and into the porous, jointed limestone, except during infrequent torrential rains, when there is some surface runoff. Rainwater percolates downward through 150 to 500 feet of limestone to reach the water table which is three to five feet above sea level. The groundwater moves slowly toward discharge points along the seashore. Runoff from the paved areas flows to one of the numerous sinkholes in the limestone where it quickly percolates to the groundwater. On the northwestern edge of the base, the surface flow is over the coastal cliffs. There are no perennial streams on the northern plateau. The high rainfall and the quick penetration to the groundwater aquifer and the surface runoff to sinkholes, provide potential pathways for contaminant migration. Groundwater production wells exist less than one mile from the base.

NATURAL RESOURCES - The limestone plateau of northern Guam is covered with what is known as a limestone forest. These forests are composed of trees, shrubs and other flora that make up the richest natural regions on Guam. They contain the greatest number of plant species that are unique to Guam. The terrestrial animal life of Guam is not as diverse. Native to Guam are several fruit eating bats, numerous species of large lizards, and several thousand different insects. There are 16 animal and three plant species listed as endangered under the Federal law and many more under the local laws of Guam. Areas of critical habitats around the island have been identified and are protected by the Government of Guam. One of those areas is to the southeast of the base. Directly surrounding the base are commercial and residential areas and the neighboring Naval Communications Station.

RISK - A Baseline Human Health and Ecological Risk Assessment will be conducted following EPA guidelines in the future as part of the Remedial Investigation/Feasibility Study (RI/FS) phase. In the DOD Relative Risk Ranking system, only one site was ranked as high risk due to lead contamination in the soil.

REGULATORY ISSUES

NATIONAL PRIORITIES LIST - The sites on the installation have not been scored under the EPA's Hazard Ranking System (HRS).

LEGAL AGREEMENTS - There are no legal agreements other than BRAC requirements driving the schedule for environmental cleanup.

PARTNERING - A partnering agreement was signed by the regulatory agencies in January 1995 and a follow-up partnering session was held in September 1995. These partnering sessions have led to an open and effective communication with all parties and improved the ongoing cleanup programs.

COMMUNITY INVOLVEMENT

RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in November 1992 and held three meetings before being converted to a Restoration Advisory Board (RAB) in December 1993. The RAB membership includes personnel from Agana NAS, the Naval Facilities Engineering Command (NAVFAC) Pacific Division (PACDIV), EPA Region IX, Guam Environmental Protection Agency (GEPA), University of Guam, US Fish and Wildlife, the BRAC Reuse Committee and COMNAVMARIANAS (the area commander). Initially the RAB met monthly, but now only quarterly. The RAB has 11 members of which nine are from the community. The RAB charter was signed in August 1994. Tours of the contaminated sites on the installation were conducted for the RAB in 1994 and 1995. The RAB meetings are very successful and are a primary source of environmental information for the public. The RAB has received training and presentations on the cleanup programs from the Navy and the BRAC Cleanup Team (BCT). The RAB has reviewed all documents produced to date for the environmental cleanup process and have provided comments from the community perspective.

COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was published in September 1992. The first Fact Sheet was produced in August 1993 for public distribution. Since then, Fact Sheets have been issued quarterly. An open public meeting was held in August 1995 with a presentation given by the Navy on the cleanup progress.

INFORMATION REPOSITORY - Three Information Repositories were established in 1992 at the Neives M. Flores Memorial Library, the Robert F. Kennedy Library at the University of Guam and at the Micronesian Area Research Center. A copy of the Administrative Record (the official file) was placed in the libraries for public review. The information at the libraries is updated by the Navy.

BASE REALIGNMENT AND CLOSURE

BRAC - The Base Realignment and Closure (BRAC) committee recommended Agana NAS for closure in 1993. The aircraft, personnel and associated equipment will be moved to other Navy air stations in Hawaii or the continental United States. The base was operationally closed on 31 March 1995. As of 1 April 1995, the major claimant became NAVFAC instead of CINCPACFLT.

BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) was established in 1993. The BCT members are the PACDIV BRAC Environmental Coordinator (BEC), EPA Region IX and GEPA. The BCT meets quarterly and conducts teleconference calls monthly. The BCT has been instrumental in establishing a partnering process with the regulatory agencies. This partnering process has helped in making key decisions on regulatory issues and determining appropriate regulatory cleanup guidance and risk assessment requirements.

DOCUMENTS - A BRAC Cleanup Plan (BCP) was published February 1994. The second update of the BCP has been done. An Environmental Baseline Survey (EBS) was completed in April 1994 and one update done. The Environmental Condition of Property assessment as required by the Community Environmental

AGANA NAS

Response Facilitation Act (CERFA) resulted in the following:

Environmental Conditions of Property Classification						
1	2	3	4	5	6	7
0 acres	0 acres	0 acres	0 acres	0 acres	29 acres	2,090 acres

LEASE/TRANSFER - Findings Of Suitability for Lease (FOSL) 1B, 2A and 2B have been completed. All are under an interim lease except for one which is under joint use.

REUSE - A community reuse committee has been formed by local community members called the Komitea Para Tiyan. An adapted reuse plan was forwarded on 26 December 1995 to the Department of Housing and Urban Development and the Secretary of Defense for Economic Security for review.

FAST-TRACK INITIATIVES - Soil contamination investigations for Sites 3-28 were fast-tracked. By implementing a fast seven-day turnaround time for samples at the laboratory, critical decisions were able to be made in the field in a timely manner. Hot spots could be immediately investigated, saving the time and cost of remobilizing the field crew and sampling equipment.

HISTORICAL PROGRESS

FY84

Sites 1 and 2 - An Initial Assessment Study (IAS), similar to a Preliminary Assessment (PA) under CERCLA, was completed in October. It identified two potential sites, both of which were recommended for further study.

FY86

Sites 1 and 2 - The Confirmation Study (CS) was started.

FY90

Site 2 - Another CS was completed.

FY93

Sites 3-15 - A PA was completed for 13 new sites.

FY94

Sites 16-23 - A PA was completed for eight new sites.
Sites 1 and 2 - The CS (now a Site Inspection (SI)) phase was completed. The SI Report identified the presence of both soil and groundwater contamination at both sites.
Site 1 - A removal action was started to install a cap on the landfill.
Site 2 - A removal action was started to install drainage controls around the holding pond.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 16-29 - The Environmental Baseline Study (EBS) was updated in 1995 and 14 more sites were identified for investigation.
Sites 24-28 - A PA was started.
Site 10 - An SI was completed.
Sites 3-9, 11-16, 26 and 28 - The SI phase was started.
Sites 1-5 and 7-23 - A removal action process was used at each of these 22 sites to install fencing to limit access to the contaminated areas.
Site 29 - The groundwater study, started under the SI phase, was still underway. As part of the groundwater characterization study, 17 monitoring wells were installed, the pumps installed and the initial heat pulse flow readings taken. Data collection from the monitoring wells began at the end of the fiscal year. Preliminary results from the first quarter of groundwater sampling indicate concentrations of volatile organic solvents TCE and DCA.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 5-7 and 12-16 - An SI is expected to be completed.
Sites 1, 2, 5, 6, 7, 10, 12-16 and 29 - The Remedial Investigation/ Feasibiliity Study (RI/FS) phase will begin.
Sites 17-25, 27 and 28 - The SI phase will begin for these sites.
Sites 1 and 2 - The planning stage for removal actions will begin by producing a removal action evaluation report for both of the sites.
Sites 3, 4, 6-8, 10, 12, 13 and 16 - A removal action process will be started for each of these sites.
Site 29 - As part of the groundwater characterization study, a regional background study and a basewide dye tracer study are planned.

FY97

Sites 3, 4, 8, 9, 11 and 17-28 - An SI is expected to be completed.
Sites 15 and 29 - An RI/FS should be finished.
Sites 4, 11 and 17-28 - An RI/FS is expected to begin.
Site 29 - The Remedial Design (RD) phase should begin.

AGANA NAS
PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	23		5					
SI	2	1	9	17				
RI/FS				2	10	15	1	1
RD					1	3	10	15
RA						1		28
IRA		22(22)			2(2)	9(9)		
RC							1	28
Cumulative Response Complete							3%	100%